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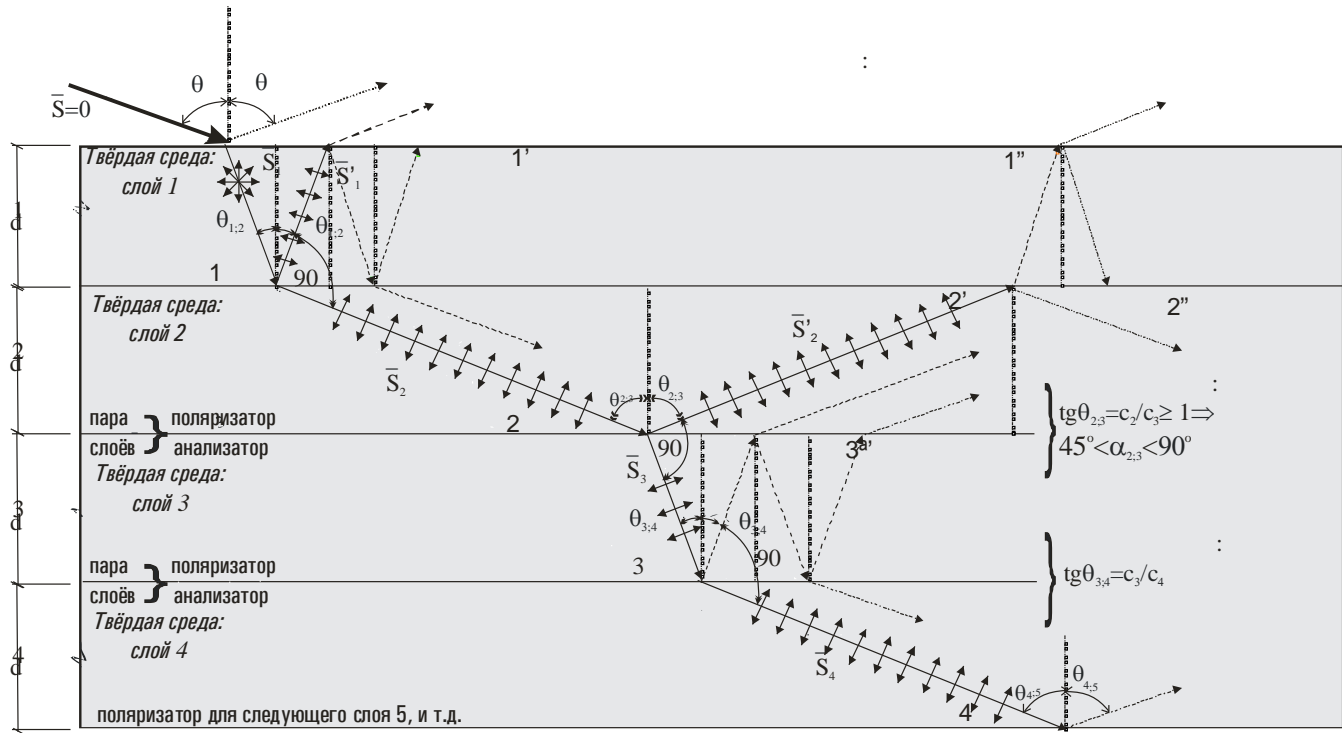
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 \bar{v}_1 (1),
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 1, \bar{S}_1 , \bar{v}_1 ,
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 1'; 2'; 3'; ...
 2; 3; 4; ...

$45^\circ < \theta < 90^\circ$

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 [1, 2] , – :
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$$= \sqrt{G/\rho}, \quad / \quad (2)$$
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 - 2, \bar{S}_2 .
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 2, (\bar{S}_1 ,
), 1¹ 2 ,
 - 2 - (\bar{S}_2 ,
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 1;2

$$\begin{aligned} \operatorname{tg} \theta_{1;2} = c_1/c_2 &= \sqrt{\frac{D_1 \omega_1^2}{m_1} \cdot \frac{m_2}{D_2 \omega_2^2}} = \sqrt[4]{\frac{E_1 d_1^3 \omega_1^2}{12(1-\mu_1^2)m_1} / \frac{E_2 d_2^3 \omega_2^2}{12(1-\mu_2^2)m_2}} = \\ &= \sqrt[4]{\frac{E_1 d_1^3 \omega_1^2 12(1-\mu_2^2)m_2}{12(1-\mu_1^2)m_1 E_2 d_2^3 \omega_2^2}} = \sqrt[4]{\frac{(1-\mu_2^2)\rho_2 E_1 d_1^2 \omega_1^2}{(1-\mu_1^2)\rho_1 E_2 d_2^2 \omega_2^2}} \end{aligned} \quad (3)$$

$$\begin{aligned} &1;2; \quad 2;3; \quad 3;4; \dots - \quad 1 \quad 2; 2 \quad 3; \dots \quad ; \\ &D_1; D_2; D_3; \dots - \quad (\quad 1; 2; 3; \dots \quad), \end{aligned}$$
 . , :

$$D = E \cdot d^3 / 12(1 - \mu^2), \quad , \quad (4)$$

$$\begin{aligned} &1; \quad 2; \quad 3; \dots - \quad (\quad 1; 2; 3; \dots), \quad ; \\ &\mu_1; \mu_2; \mu_3; \dots - \quad ; \\ &1; \quad 2; \quad 3; \dots - \quad : \\ &= 2 \cdot f, \end{aligned} \quad (5)$$

$$\begin{aligned} &f_1; f_2; f_3; \dots - \quad , \quad ; \\ &m_1; m_2; m_3; \dots - \quad 1; 2; 3; \dots \quad , (\dots : \\ &1; 2; 3; \dots \quad), \quad / \quad ^2, \end{aligned}$$

$$m = \cdot d \quad (6)$$

$$d_1; d_2; d_3; \dots - \quad 1; 2; 3; \dots \quad , \quad ;$$

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 $1; 2; 3; \dots -$, $/^3$.
 (\quad) 2^3 2^3
 3 , 2^3 3 ,
 $- 3$, (\quad) 2^3 \bar{S}_3
 2^1), $-$:
 3 .

$$\operatorname{tg}_{2;3} = 2/3 = \sqrt[4]{\frac{(1-\mu_3^2)\rho_3 E_2 d_2^2 \omega_2^2}{(1-\mu_2^2)\rho_2 E_3 d_3^2 \omega_3^2}} \quad (7)$$

$$\operatorname{tg}_{1;2} \neq \operatorname{tg}_{2;3} \quad (8)$$

\bar{S}_3 , \bar{S}_2 ,
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 $3-$.
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 (\quad) ,
 $\operatorname{tg}_{1,}$,
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 (\quad)

$$1) \quad \left\{ \begin{array}{l} 2 : \\ 1 \quad 2; \quad 1 / 2 = \operatorname{tg}_{1,2} \quad 1; \\ 1,2 > 45^\circ, \quad 1,2 = 90^\circ . \end{array} \right. \quad (9)$$

$$2) \quad \left\{ \begin{array}{l} \cdot \\ 1 \quad 2; \quad 1 / 2 = \operatorname{tg}_{1,2} \quad 1; \\ 1,2 < 45^\circ, \quad 1,2 = 0^\circ . \end{array} \right. \quad (10)$$

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 $[3, \quad - 243, 273]$,

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:
 $\sin = 1 / 2$ (11)

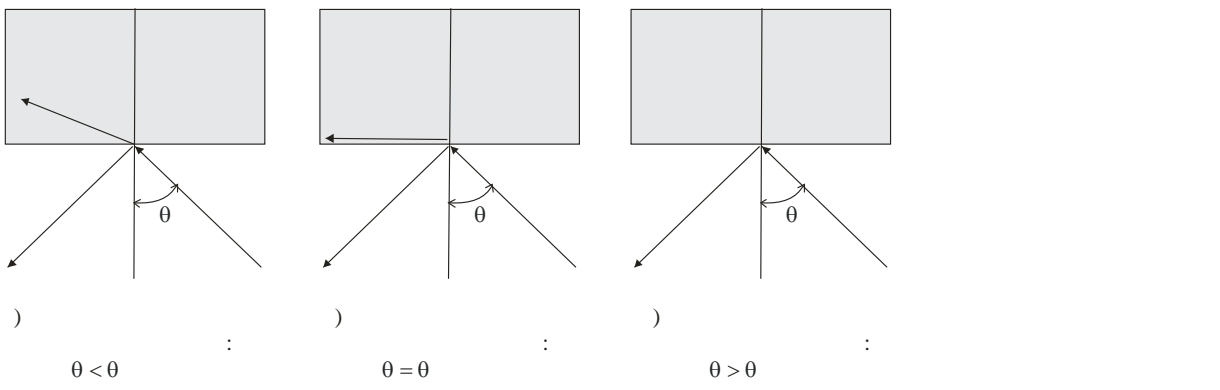
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d_i (

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” ” $i-$, (, 2-)

d_i , . :

$= 2d_i \operatorname{tg}_{i-1,1} - /2 = 2d_{i-1} / i - /2$ (11)

: - , .

:

$= k$, ($k=0; 1; 2; \dots -$), (12)

’

$(i-1)1 \quad (i-1)11:$

$= d_{i-1} / i (2k+1)$, ($k=0; 1; 2; \dots -$). (13)

(12)

$(i-1)^1 \quad (i-1)^{11}:$

$= d_{i-1} / i k$, ($k=0; 1; 2; \dots -$). (14)

... d_i ,

$k=1$,

; , ,

d_i , ,

i

(13), , (14) :

$k = 2d_{i-1} / i$, ($k=0; 1; 2; \dots -$). (15)

... ,

... $k=1$, (k

$= 2; 3; 4; \dots$). , $= 0,02$, - , ,

0,04; 0,06; 0,08; 0,10; 0,12; ... , . .)

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